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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- (Original) A method for performing mass spectrometry of sulfur atom-containing derivatives of an organic residue, characterized in that the method comprises ionizing a metal-organic residue complex into the derivatives, wherein the complex has the organic residue bound through a sulfur atom to the metal.
- (Original) A method for performing mass spectrometry of a compound or salt thereof, characterized in that the method comprises ionizing a metal-organic residue complex into sulfur atom-containing derivatives,

wherein the metal-organic residue complex is represented by the general formula (I) $(R-S)_n-M^1$ (I).

wherein R is an organic residue, S is a sulfur atom and n indicates a stoichiometric ratio of (R-S) group with respect to M^1 and is an integer equal to or greater than 1: and

wherein the compound is represented by the general formulae (II) and/or (III):

R-SH (II) and/or R-S-S-R (III).

wherein R and S are the same as defined above.

 (Original) A method for performing mass spectrometry of a compound or salt thereof, characterized in that the method comprises ionizing a metal-organic residue complex into sulfur atom-containing derivatives.

wherein the metal-organic residue complex is represented by the general formula (IV): M¹-S-X-CH(R)-S-M¹ (IV),

wherein R is an organic residue, S is a sulfur atom, M¹ at both ends are same metal entities, X is a lower alkylene or a lower alkenylene;

wherein the compound is represented by the general formulae (V) and/or (VI):

HS-X-CH(R)-SH (V) and/or

 $R \longrightarrow R$ (VI)

wherein R, S and X are the same as defined above.

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4. (Original) A method for performing mass spectrometry of a sugar chain or a sugar chain-containing substance, comprising the following steps of:

 contacting a metal-organic residue complex with a sugar chain or a sugar chain-containing substance under the conditions where the metal-organic residue complex and the sugar chain or sugar chain-containing substance may react with each other, wherein the metal-organic residue complex contains a metal bound to a group represented by the following formula:

```
-S-Y-(OCH2CH2),-NH-C(=O)-CH2-O-NH2.
-S-Y-(OCH2CH2)n-NH-C(=O)-CH2-O-NH(CH3),
-S-Y-(OCH2CH2)n-NH-C(=O)-CH(NH2)-W4-SH,
-S-Y-(OCH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub>-NH-C(=S)-CH(NH<sub>2</sub>)-W<sup>4</sup>-SH,
-S-W1-O-NH2.
-S-W1-O-NH(CH2).
-S-W1-O-W2-O-NH2.
-S-W1-O-W2-O-NH(CH3),
-S-(CH<sub>2</sub>CH<sub>2</sub>O)<sub>n</sub>-W<sup>1</sup>-O-W<sup>2</sup>-O-NH<sub>2</sub>,
-S-(CH<sub>2</sub>CH<sub>2</sub>O)<sub>n</sub>-W<sup>1</sup>-O-W<sup>2</sup>-O-NH(CH<sub>3</sub>),
-S-W1-C(=O)-NH-NH2.
-S-W1-C(=S)-NH-NH2.
-S-W1-NH-C(=O)-CH(NH2)-W4-SH,
-S-W1-NH-C(=S)-CH(NH2)-W4-SH
-S-Z^1-Z^2-Z^3-Z^4-Z^5-O-NH_2
-S-Z1-Z2-Z3-Z4-Z5-O-NH(CH3).
-S-Z1-Z2-Z3-Z4-CH(NH2)-O-Z6-SH.
-S-Z1-Z2-Z3-Z4-CH(NH2)-Z6-SH.
-S-Z1-O-Z3-CH(NH2)-Z6-SH,
-S-Z1-O-Z3-O-NH2,
-S-Z1-O-Z3-O-NH(CH3).
-S-Z^1-O-Z^3-Z^4-Z^5-O-NH_2
-S-Z1-O-Z3-Z4-Z5-O-NH(CH3),
-S-Z1-O-Z3-Z4-CH(NH2)-O-Z6-SH
-S-Z1-O-Z3-Z4-CH(NH2)-Z6-SH
-S-Z1-Z3-Z4-Z5-O-NH2.
-S-Z1-Z3-Z4-Z5-O-NH(CH3).
-S-Z1-Z3-Z4-CH(NH<sub>2</sub>)-O-Z6-SH.
-S-Z1-Z3-Z4-CH(NH2)-Z6-SH,
```

2) obtaining the metal-organic residue complex bound to the sugar chain or the sugar chain-containing substance; and

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- 3) ionizing the metal-organic residue complex bound to the sugar chain or the sugar chain-containing substance into sulfur atom-containing derivatives of the organic residue.
- 5. (Original) A method according to any one of claims 1 to 4, wherein the metal has a surface enough to cause a diffuse reflection of a laser beam.
- 6. (Original) A method according to claim 5, wherein the metal is a fine metal particle.
- 1 7. (Currently Amended) A method according to any one of claims 1 to 4 and 6, wherein the metal is gold, silver, cadmium or selenium.
- 8. (Currently Amended) A method according to any one of claims 1 to 4 and 6, wherein the mass spectrometry is carried out by MALDI-TOF MS method.
 - 9. (Original) A method according to any one of claims 1 to 3, wherein the organic residue is a group comprising a sugar chain or a sugar chain-containing substance.
 - (Original) A method for performing mass spectrometry of a sulfur atomcontaining analyte comprising the steps of:
 - 1) reacting tetrachloroauric acid with a sulfur atom-containing analyte in the presence of a reducing agent;
- 2) obtaining a gold-analyte complex particle which has the analyte bound through the sulfur atom to the gold; and
- 3) ionizing the obtained gold-analyte complex particles into a sulfur atomcontaining analyte derivative.
- (Original) A metal-organic residue complex containing a metal bound to a group 11. represented by the following formula:
 - -S-Y-(OCH2CH2)n-NH-C(=O)-CH2-O-NH2,
 - -S-Y-(OCH2CH2)n-NH-C(=O)-CH2-O-NH(CH3),
 - -S-Y-(OCH2CH2)n-NH-C(=O)-CH(NH2)-W4-SH.
 - -S-Y-(OCH₂CH₂)_n-NH-C(=S)-CH(NH₂)-W⁴-SH.

 - -S-W1-O-NH2.
 - -S-W1-O-NH(CH3),
 - -S-W1-O-W2-O-NH2,
 - -S-W1-O-W2-O-NH(CH3).
 - -S-(CH₂CH₂O)_n-W¹-O-W²-O-NH₂,

 - -S-(CH₂CH₂O)_n-W¹-O-W²-O-NH(CH₃),
 - -S-W1-C(=O)-NH-NH2,
 - -S-W1-C(=S)-NH-NH2,
 - -S-W1-NH-C(=O)-CH(NH2)-W4-SH.

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-S-W1-NH-C(=S)-CH(NH2)-W4-SH, $-S-Z^1-Z^2-Z^3-Z^4-Z^5-O-NH_2$ -S-Z¹-Z²-Z³-Z⁴-Z⁵-O-NH(CH₃), -S-Z¹-Z²-Z³-Z⁴-CH(NH₂)-O-Z⁶-SH. $-S-Z^1-Z^2-Z^3-Z^4-CH(NH_2)-Z^6-SH$, -S-Z¹-O-Z³-CH(NH₂)-Z⁶-SH, -S-Z1-O-Z3-O-NH2, -S-Z1-O-Z3-O-NH(CH3). -S-Z1-O-Z3-Z4-Z5-O-NH2, -S-Z1-O-Z3-Z4-Z5-O-NH(CH2). -S-Z1-O-Z3-Z4-CH(NH2)-O-Z6-SH -S-Z1-O-Z3-Z4-CH(NH2)-Z6-SH -S-Z1-Z3-Z4-Z5-O-NH2, -S-Z1-Z3-Z4-Z5-O-NH(CH3). -S-Z1-Z3-Z4-CH(NH2)-O-Z6-SH, -S-Z1-Z3-Z4-CH(NH2)-Z6-SH, or wherein, Y, W¹ and W² are independently C1-C12 alkylene, C2-C12 alkenylene or C2-C12 alkynylene: W⁴ is C1-C2 alkylene; Z¹ is substituted or unsubstituted arvlen or heteroarvlen; Z2 is a nitrogen-containing heterocycle; Z³ and Z⁵ are independently C1-C12 alkylene:

12. (Original) A method for producing metal-organic residue complex particles, wherein the method comprises reacting tetrachloroauric acid with a compound represented by the following formula:

Z⁴ is -O-C(=O), -O-C(=S), -NH-C(=O), -NH-C(=S), -O- or -S-;

Z6 is C1-C2 alkylene; and

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-(S-Y-(OCH_{2}CH_{3})_{-}-NH-C(=O)-CH_{3}-O-NH_{3})_{3}
-(S-Y-(OCH_2CH_2)_n-NH-C(=O)-CH_2-O-NH(CH_3))_2
-(S-Y-(OCH_2CH_2)_n-NH-C(=O)-CH(NH_2)-W^4-SH)_n
-(S-Y-(OCH<sub>2</sub>CH<sub>4</sub>),-NH-C(=S)-CH(NH<sub>5</sub>)-W<sup>4</sup>-SH)<sub>5</sub>
-(S-W1-O-NH<sub>2</sub>)<sub>2</sub>
-(S-W1-O-NH(CHa)) *-
-(S-W1-O-W2-O-NH2)2
-(S-W1-O-W2-O-NH(CHa)) ...
-(S-(CH<sub>2</sub>CH<sub>2</sub>O)<sub>2</sub>-W<sup>1</sup>-O-W<sup>2</sup>-O-NH<sub>2</sub>)<sub>2</sub>,
-(S-(CH_2CH_2O)_0-W^1-O-W^2-O-NH(CH_3))_2
-(S-W1-C(=0)-NH-NH2)2
-(S-W1-C(=S)-NH-NH2)2,
-(S-W1-NH-C(=0)-CH(NH<sub>0</sub>)-W4-SH)<sub>2</sub>,
-(S-W1-NH-C(=S)-CH(NH<sub>0</sub>)-W4-SH)<sub>0</sub>
-(S-Z1-Z2-Z3-Z4-Z5-O-NH2)2,
-(S-Z1-Z2-Z3-Z4-Z5-O-NH(CH3))3,
-(S-Z1-Z2-Z3-Z4-CH(NH2)-O-Z6-SH)2
-(S-Z^1-Z^2-Z^3-Z^4-CH(NH_0)-Z^6-SH)_0
-(S-Z1-O-Z3-CH(NH2)-Z6-SH)2,
-(S-Z1-O-Z3-O-NHa)a
-(S-Z1-O-Z3-O-NH(CH3))25
-(S-Z1-O-Z3-Z4-Z5-O-NH2)2.
-(S-Z1-O-Z3-Z4-Z5-O-NH(CHa)),
-(S-Z1-0-Z3-Z4-CH(NH2)-0-Z6-SH)2,
-(S-Z1-O-Z3-Z4-CH(NH2)-Z6-SH)2
-(S-Z1-Z3-Z4-Z5-O-NH2)2,
-(S-Z1-Z3-Z4-Z5-O-NH(CHa)) ...
-(S-Z1-Z3-Z4-CH(NH2)-O-Z6-SH)2,
-(S-Z^1-Z^3-Z^4-CH(NH_2)-Z^6-SH)_2
```

, or a salt thereof, in the presence of a reducing agent, wherein, Y, W¹ and W² are independently C1-C12 alkylene,

C2-C12 alkenylene or C2-C12 alkynylene;

W4 is C1-C2 alkylene;

 Z^1 is substituted or unsubstituted arylen or heteroarylen;

Z² is a nitrogen-containing heterocycle;

Z³ and Z⁵ are independently C1-C12 alkylene;

Z⁴ is -O-C(=O), -O-C(=S), -NH-C(=O), -NH-C(=S), -O- or -S-;

Z⁶ is C1-C2 alkylene; and

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13. (Original) A method for trapping a sugar chain or a sugar chain-containing substance, characterized in that the method comprises contacting a metal-organic residue complex with a sugar chain or a sugar chain-containing substance, under conditions where the metal-organic residue complex and the sugar chain or the sugar chain-containing substance may react with each other,

the metal-organic residue complex has a metal bound to a group represented by the following formula:

```
-S-Y-(OCH2CH2)n-NH-C(=O)-CH2-O-NH2,
-S-Y-(OCH2CH2)n-NH-C(=O)-CH2-O-NH(CH3).
-S-Y-(OCH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub>-NH-C(=O)-CH(NH<sub>2</sub>)-W<sup>4</sup>-SH,
-S-Y-(OCH2CH2)n-NH-C(=S)-CH(NH2)-W4-SH,
-S-W1-O-NH2.
-S-W1-O-NH(CH2).
-S-W1-O-W2-O-NH2,
-S-W1-O-W2-O-NH(CH2).
-S-(CH<sub>2</sub>CH<sub>2</sub>O)<sub>n</sub>-W<sup>1</sup>-O-W<sup>2</sup>-O-NH<sub>2</sub>,
-S-(CH<sub>2</sub>CH<sub>2</sub>O)<sub>n</sub>-W<sup>1</sup>-O-W<sup>2</sup>-O-NH(CH<sub>3</sub>),
-S-W^1-C(=O)-NH-NH_2
-S-W1-C(=S)-NH-NH2.
-S-W1-NH-C(=O)-CH(NH2)-W4-SH.
-S-W1-NH-C(=S)-CH(NH2)-W4-SH.
-S-Z<sup>1</sup>-Z<sup>2</sup>-Z<sup>3</sup>-Z<sup>4</sup>-Z<sup>5</sup>-O-NH<sub>2</sub>.
-S-Z1-Z2-Z3-Z4-Z5-O-NH(CH3),
-S-Z<sup>1</sup>-Z<sup>2</sup>-Z<sup>3</sup>-Z<sup>4</sup>-CH(NH<sub>2</sub>)-O-Z<sup>6</sup>-SH.
-S-Z1-Z2-Z3-Z4-CH(NH2)-Z6-SH,
-S-Z<sup>1</sup>-O-Z<sup>3</sup>-CH(NH<sub>2</sub>)-Z<sup>6</sup>-SH,
-S-Z1-O-Z3-O-NH2.
-S-Z1-O-Z3-O-NH(CH3).
-S-Z^1-O-Z^3-Z^4-Z^5-O-NH_2
-S-Z^1-O-Z^3-Z^4-Z^5-O-NH(CH_3),
-S-Z<sup>1</sup>-O-Z<sup>3</sup>-Z<sup>4</sup>-CH(NH<sub>2</sub>)-O-Z<sup>6</sup>-SH
-S-Z1-O-Z3-Z4-CH(NH2)-Z6-SH
-S-Z^1-Z^3-Z^4-Z^5-O-NH_2
-S-Z1-Z3-Z4-Z5-O-NH(CH3),
-S-Z1-Z3-Z4-CH(NH2)-O-Z6-SH,
-S-Z1-Z3-Z4-CH(NH2)-Z6-SH.
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wherein, Y, W1 and W2 are independently C1-C12 alkylene, C2-C12 alkenylene or C2-C12 alkynylene:

W4 is C1-C2 alkylene;

Z1 is substituted or unsubstituted arylen or heteroarylen;

Z² is a nitrogen-containing heterocycle;

Z3 and Z5 are independently C1-C12 alkylene;

Z⁴ is -O-C(=O), -O-C(=S), -NH-C(=O), -NH-C(=S), -O- or -S-:

Z6 is C1-C2 alkylene; and

- (Original) A method for measuring the molecular weight of a substance which may interact with an organic residue of a metal-organic residue complex, comprising the steps of:
- 1) contacting the metal-organic residue complex with a substance which may interact with the organic residue, wherein the metal is bound through a sulfur atom to organic residue;
- 2) obtaining the metal-organic residue complex bound to the substance which may interact; and
- 3) ionizing the obtained metal-organic residue complex into derivatives of the organic residue, wherein the organic residue contains a sulfur atom.
- (Original) A method for performing mass spectrometry of a sugar chain or a sugar chain-containing substance, comprising the steps of:
- 1) contacting a compound with a metal, wherein the compound is represented by the following formula:

- 2) contacting the metal-organic residue complex obtained in 1) with a sugar chain or a sugar chain-containing substance under conditions where the metal-organic residue complex and the sugar chain or the sugar chain-containing substance may react with each other: and
- 3) ionizing the metal-organic residue complex obtained in 2) into derivatives of the organic residue, wherein the organic residue contains a sulfur atom.
- (Original) A method for performing mass spectrometry of a sugar chain or a sugar 16. chain-containing substance, comprising the steps of:
 - 1) contacting a compound represented by the following formula:

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with a sugar chain or a sugar chain-containing substance under conditions where the compound and the sugar chain or the sugar chain-containing substance may react with each other:

- 2) contacting the compound obtained in 1) with a metal; and
- ionizing the metal-organic residue complex obtained in 2) into derivatives of the organic residue, wherein the organic residue contains a sulfur atom.
- 17. (Original) A composition for trapping a sugar chain, comprising
 - a compound represented by the general formula (II):
- R-SH (II) or a salt thereof, wherein R is an organic residue; and S is a sulfur

atom;

- a compound represented by the general formula (III):
- R-S-S-R (III) or a salt thereof, wherein, R and S are the same as defined
- above;
- a compound represented by the general formula (V):
- $\label{eq:hs-x-ch} HS-X-CH(R)-SH \qquad (V) \mbox{ or a salt thereof, wherein } R \mbox{ and } S \mbox{ are the same as defined above; and } X \mbox{ is lower alkylene or lower alkenylene; or }$
 - a compound represented by the general formula (VI):

$$S \longrightarrow R$$
 (VI)

or a salt thereof, wherein, R, S and X are the same as defined above; or a mixture thereof.

18. (Currently Amended) A-The composition of claim 17 for trapping a sugar chain, comprising a wherein the compound is represented by the following formula:

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-(S-Y-(OCH<sub>2</sub>CH<sub>2</sub>),-NH-C(=O)-CH<sub>2</sub>-O-NH<sub>2</sub>)<sub>a</sub>,
-(S-Y-(OCH2CH2),-NH-C(=O)-CH2-O-NH(CH2))2.
-(S-Y-(OCH,CH,),-NH-C(=0)-CH(NH,)-W4-SH),
-(S-Y-(OCH_0CH_0)_-NH-C(=S)-CH(NH_0)-W^4-SH)_0
-(S-W1-O-NH2)2,
-(S-W1-O-NH(CH<sub>2</sub>))<sub>2</sub>
-(S-W1-0-W2-0-NH2)2
-(S-W1-O-W2-O-NH(CH2)),
-(S-(CH2CH2O),-W1-O-W2-O-NH2)2.
-(S-(CH,CH,O),-W1-O-W2-O-NH(CH,)),
-(S-W1-C(=0)-NH-NH2)2,
-(S-W1-C(=S)-NH-NH.).
-(S-W1-NH-C(=0)-CH(NH,)-W1-SH),
-(S-W'-NH-C(=S)-CH(NH<sub>0</sub>)-W*-SH)<sub>0</sub>
-(S-Z1-Z2-Z3-Z4-Z5-O-NH2),
-(S-Z^1-Z^2-Z^3-Z^4-Z^5-O-NH(CH_3))_2
-(S-Z1-Z2-Z3-Z4-CH(NH2)-O-Z6-SH)2.
-(S-Z1-Z2-Z3-Z4-CH(NHa)-Z6-SH)a.
-(S-Z1-O-Z3-CH(NHa)-Z6-SH)a.
-(S-Z1-0-Z3-0-NH2)2,
-(S-Z1-O-Z3-O-NH(CH3))2.
-(S-Z1-O-Z3-Z4-Z5-O-NH2)25
-(S-Z1-O-Z3-Z4-Z5-O-NH(CH3))2
-(S-Z1-O-Z3-Z1-CH(NH2)-O-Z6-SH)2
-{S-Z1-O-Z3-Z4-CH(NHa)-Z6-SH)a.
(S-Z1-Z3-Z4-Z5-O-NHa) ...
-(S-Z1-Z3-Z4-Z8-O-NH(CHa))2
-(S-Z1-Z3-Z4-CH(NHa)-O-Z4-SH) a.
-(S-Z1-Z3-Z4-CH(NH2)-Z6-SH)
or
```

wherein Y, W¹ and W² are independently C1-C12 alkylene, C2-C12 alkenylene or C2-C12 alkynylene;

W⁴ is C1-C2 alkylene;

Z¹ is substituted or unsubstituted arvlen or heteroarvlen;

Z² is a nitrogen-containing heterocycle;

Z³ and Z⁵ are independently C1-C12 alkylene;

Z⁴ is -O-C(=O), -O-C(=S), -NH-C(=O), -NH-C(=S), -O- or -S-;

Z⁶ is C1-C2 alkylene; and

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19. (Original) A metal-organic residue complex represented by the following formula:

M²-(S-Y-(OCH₂CH₂)₀-NH-C(=O)-CH₂-O-NH₂)_m,

M²-(S-Y-(OCH₂CH₂)_n-NH-C(=O)-CH₂-O-NH(CH₃))_m,

 M^2 -(S-Y-(OCH₂CH₂)_n-NH-C(=O)-CH(NH₂)-W⁴-SH)_m,

M2-(S-Y-(OCH2CH2)n-NH-C(=S)-CH(NH2)-W4-SH)m,

 M^2 -(S-W¹-O-NH₂)_m,

M2-(S-W1-O-NH(CH3))m,

M²-(S-W¹-O-W²-O-NH₂)_m,

M2-(S-W1-O-W2-O-NH(CH3))m,

 M^2 -(S-(CH₂CH₂O)_n-W¹-O-W²-O-NH₂)_m,

M2-(S-(CH2CH2O)n-W1-O-W2-O-NH(CH3))m,

M2-(S-W1-C(=O)-NH-NH2)m

M²-(S-W¹-C(=S)-NH-NH₂)_m

M²-(S-W¹-NH-C(=O)-CH(NH₂)-W⁴-SH)_m.

M²-(S-W¹-NH-C(=S)-CH(NH₂)-W⁴-SH)_m,

 M^2 -(S-Z¹-Z²-Z³-Z⁴-Z⁵-O-NH₂)_m

M²-(S-Z¹-Z²-Z³-Z⁴-Z⁵-O-NH(CH₃))_m

M²-(S-Z¹-Z²-Z³-Z⁴-CH(NH₂)-O-Z⁶-SH)_m,

M²-(S-Z¹-Z²-Z³-Z⁴-CH(NH₂)-Z⁶-SH)_m,

M²-(S-Z¹-O-Z³-CH(NH₂)-Z⁶-SH)_m,

M²-(S-Z¹-O-Z³-O-NH₂)_m,

M²-(S-Z¹-O-Z³-O-NH(CH₃))_m, M²-(S-Z¹-O-Z³-Z⁴-Z⁵-O-NH₂)_m,

 M^2 -(S-Z¹-O-Z³-Z⁴-Z⁵-O-NH(CH₃))_m,

M²-(S-Z¹-O-Z³-Z⁴-CH(NH₂)-O-Z⁶-SH)_m,

M2-(S-Z1-O-Z3-Z4-CH(NH2)-Z6-SH)m,

 M^2 -(S-Z¹-Z³-Z⁴-Z⁵-O-NH₂)_m,

 M^2 -(S-Z¹-Z³-Z⁴-Z⁵-O-NH(CH₃))_m,

M²-(S-Z¹-Z³-Z⁴-CH(NH₂)-O-Z⁶-SH)_m,

 M^2 -(S-Z¹-Z³-Z⁴-CH(NH₂)-Z⁶-SH)_m,

or the general formula (VII):

$$M^{2} \left[\begin{array}{c} N \\ N \\ N \\ NH_{2} \end{array} \right] \begin{array}{c} N \\ NH_{2} \\ M \end{array} \right]$$
 (VII)

wherein, M2 is a metal;

m indicates a stoichiometric ratio of an organic residue with respect to M^2 and is an integer equal to or greater than 1, wherein the organic residue contains a sulfur atom; Y, W^1 and W^2 are independently C1-C12 alkylene, C2-C12 alkenylene or C2-C12 alkynylene;

W4 is C1-C2 alkylene;

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Z¹ is substituted or unsubstituted arylen or heteroarylen;

Z2 is a nitrogen-containing heterocycle;

Z3 and Z5 are independently C1-C12 alkylene:

Z⁴ is -O-C(=O), -O-C(=S), -NH-C(=O), -NH-C(=S), -O- or -S-:

Z⁶ is C1-C2 alkylene; and

n is an integer between 1 and 10, inclusive.

(Original) A composition for trapping a sugar chain, comprising: a metalorganic residue complex represented by the general formula (I):

wherein R is an organic residue; S is a sulfur atom; M1 is a metal; and n indicates a stoichiometric ratio of (R-S) group with respect to M¹ and is an integer equal to or greater than 1: or

a metal-organic residue complex represented by the general formula (IV): M1-S-X-CH(R)-S-M1(IV),

wherein R and S are the same as defined above, M¹ at both ends are a metal of the same substance and X is lower alkylene or lower alkenylene.

(Currently Amended) A The composition of claim 20for tranning a sugar chain. eomprising a wherein the metal-organic residue complex; is represented by the following formula:

M²-(S-Y-(OCH₂CH₂)_n-NH-C(=O)-CH₂-O-NH₂)_m

M2-(S-Y-(OCH2CH2)n-NH-C(=O)-CH2-O-NH(CH3))nn

M2-(S-Y-(OCH2CH2),-NH-C(=O)-CH(NH2)-W4-SH),...

M²-(S-Y-(OCH₂CH₂)_n-NH-C(=S)-CH(NH₂)-W⁴-SH)_m

M2-(S-W1-O-NH2)m,

M2-(S-W1-O-NH(CH2))m.

M2-(S-W1-O-W2-O-NH2)m.

M2-(S-W1-O-W2-O-NH(CH3))m

M2-(S-(CH2CH2O)n-W1-O-W2-O-NH2)m,

M²-(S-(CH₂CH₂O)_n-W¹-O-W²-O-NH(CH₃))_m,

M2-(S-W1-C(=O)-NH-NH2)m

 M^2 -(S-W¹-C(=S)-NH-NH₂)_m

M2-(S-W1-NH-C(=O)-CH(NH2)-W4-SH)m

M2-(S-W1-NH-C(=S)-CH(NH2)-W4-SH)m

 M^2 -(S-Z¹-Z²-Z³-Z⁴-Z⁵-O-NH₂)_m

M2-(S-Z1-Z2-Z3-Z4-Z5-O-NH(CH3))m,

M²-(S-Z¹-Z²-Z³-Z⁴-CH(NH₂)-O-Z⁶-SH)_m, M2-(S-Z1-Z2-Z3-Z4-CH(NH2)-Z6-SH)m

M2-(S-Z1-O-Z3-CH(NH2)-Z6-SH)_m

M2-(S-Z1-O-Z3-O-NH2)...

M2-(S-Z1-O-Z3-O-NH(CH2))m

M²-(S-Z¹-O-Z³-Z⁴-Z⁵-O-NH₂)_m

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M2-(S-Z1-O-Z3-Z4-Z5-O-NH(CH3))m, M2-(S-Z1-O-Z3-Z4-CH(NH2)-O-Z6-SH)...

M2-(S-Z1-O-Z3-Z4-CH(NH2)-Z6-SH)m,

 $M^2-(S-Z^1-Z^3-Z^4-Z^5-O-NH_2)_m$

M²-(S-Z¹-Z³-Z⁴-Z⁵-O-NH(CH₃))_m,

M2-(S-Z1-Z3-Z4-CH(NH2)-O-Z6-SH)m,

M²-(S-Z¹-Z³-Z⁴-CH(NH₂)-Z⁶-SH)_m

or the general formula (VII):

$$M^{2} \left[\begin{array}{c} N - N \\ N + N \end{array} \right]_{NH_{2}}^{NH_{2}} NH_{2}$$
 (VII)

wherein.

M2 is a metal:

m indicates a stoichiometric ratio of an organic residue with respect to M² and is an integer equal to or greater than 1, wherein the organic residue comprises a sulfur atom:

Y. W¹ and W² are independently C1-C12 alkylene, C2-C12 alkenylene or C2-C12 alkynylene;

W4 is C1-C2 alkylene;

Z¹ is substituted or unsubstituted arvlen or heteroarvlen:

Z² is a nitrogen-containing heterocycle:

Z³ and Z⁵ are independently C1-C12 alkylene;

Z⁴ is -O-C(=O), -O-C(=S), -NH-C(=O), -NH-C(=S), -O- or -S-;

Z⁶ is C1-C2 alkylene and n is an integer between 1 and 10, inclusive.

- 22. (Original) A kit for mass spectrometry of a sugar chain or a sugar chaincontaining substance, comprising:
- A) a compound represented by the general formula (II): (II)

or a salt thereof, wherein R is an organic residue; and S is a sulfur atom;

a compound represented by the general formula (III) R-S-S-R (III)

or a salt thereof, wherein R and S are the same as defined above;

a compound represented by the general formula (V): (V)

HS-X-CH(R)-SH

or a salt thereof, wherein R and S are the same as defined above; and X is lower alkylene or lower alkenylene; or

a compound represented by the general formula (VI):

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or a salt thereof, wherein R, S and X are the same as defined above; or a mixture thereof; and

B) a metal.

23. (Original) A kit for mass spectrometry of a sugar chain or a sugar chaincontaining substance, comprising:

A) a sulfur atom containing derivatives of an organic residue, represented by the following formula:

$$\begin{array}{ll} -(S-Y-(OCH_2CH_2)_n-NH-C(=O)-CH_2-O-NH_2)_2, \\ -(S-Y-(OCH_2CH_2)_n-NH-C(=O)-CH_2-O-NH(CH_3))_2, \\ -(S-Y-(OCH_2CH_2)_n-NH-C(=O)-CH(NH_2)-W^4-SH)_2, \\ -(S-Y-(OCH_2CH_2)_n-NH-C(=S)-CH(NH_2)-W^4-SH)_2, \\ -(S-W'-O-NH/(CH_3))_2, \\ -(S-W'-O-NH/(CH_3))_2, \\ -(S-W'-O-NH/CH_3)_2, \\ -(S-W'-O-NH-O-NH_2)_2, \\ -(S-W'-O-NH-O-NH-O-NH-O-NH_2)_2, \\ -(S-C(CH_2CH_2O)_n-W'-O-W^2-O-NH(CH_3))_2, \\ -(S-C(CH_2CH_2O)_n-W'-O-W^2-O-NH(CH_3))_2, \\ -(S-W'-C(=S)-NH-NH_2)_2, \\ -(S-W'-C(=S)-NH-NH_2)_2, \\ -(S-W'-NH-C(=O)-CH(NH_2)-W^4-SH)_2, \\ -(S-W'-NH-C(=S)-CH(NH_2)-W^4-SH)_2, \\ -(S-Z'-Z^2-Z^2-Z^4-Z^3-O-NH_2)_2, \\ -(S-Z'-Z^2-Z^3-Z^4-CH(NH_2)-O-Z^8-SH)_2, \\ -(S-Z'-CZ^2-Z^3-Z^4-CH(NH_2)-Z^5-SH)_2, \\ -(S-Z'-O-Z^3-O-NH_2)_2, \\ -(S-Z'-O-Z^3-O-NH(CH_3))_2, \\ -(S-Z'-O-Z^3-CH(NH_2)-Z^6-SH)_2, \\ -(S-Z'-O-Z^3-Z^4-Z^6-O-NH_2)_2, \\ -(S-Z'-O-Z^3-Z^4-Z^6-O-NH_2)_2, \\ -(S-Z'-O-Z^3-Z^4-Z^6-O-NH_2)_2, \\ -(S-Z'-O-Z^3-Z^4-Z^6-O-NH_2)_2, \\ -(S-Z'-Z^3-Z^4-Z^6-O-NH_2)_2, \\ -(S-Z'-Z^3-Z^4-C-C+(NH_3)-C^2-SH)_2, \\ -(S-Z'-Z^3-Z^4-C-C+(NH$$

wherein Y, W¹ and W² are independently C1-C12 alkylene, C2-C12 alkenylene or C2-C12 alkynylene;

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W4 is C1-C2 alkylene;

Z1 is substituted or unsubstituted arylen or heteroarylen;

Z² is a nitrogen-containing heterocycle:

Z3 and Z5 are independently C1-C12 alkylene:

Z⁴ is -O-C(=O), -O-C(=S), -NH-C(=O), -NH-C(=S), -O- or -S-;

Z⁶ is C1-C2 alkylene; and

n is an integer between 1 and 10, inclusive; and

B) a metal.

(Original) A kit for mass spectrometry of a sugar chain or a sugar chaincontaining substance, comprising:

a metal-organic residue complex represented by the general formula (I): (R-S)_n-M¹

wherein, R is an organic residue, S is a sulfur atom, M1 is a metal and n indicates a stoichiometric ratio of (R-S) group with respect to M¹ and is an integer equal to or greater than 1: or

a metal-organic residue complex represented by the general formula (IV):

M1-S-X-CH(R)-S-M1 (IV)

wherein R and S are the same as defined above, M1 at both ends are same metal entities and X is lower alkylene or lower alkenylene.

(Currently Amended) A-The kit of claim 24for mass spectrometry of a sugar chain or a sugar chain containing substance, comprising a wherein the metal-organic residue complex; is represented by the following formula:

 M^2 -(S-Y-(OCH₂CH₂)_n-NH-C(=O)-CH₂-O-NH₂)_m,

M²-(S-Y-(OCH₂CH₂)_n-NH-C(=O)-CH₂-O-NH(CH₃))_m

M²-(S-Y-(OCH₂CH₂)_n-NH-C(=O)-CH(NH₂)-W⁴-SH)_{ma}

M²-(S-Y-(OCH₂CH₂)₀-NH-C(=S)-CH(NH₂)-W⁴-SH)_m

M2-(S-W1-O-NH2)m.

M2-(S-W1-O-NH(CH3))m,

M2-(S-W1-O-W2-O-NH2)m,

M2-(S-W1-O-W2-O-NH(CH3))m,

M²-(S-(CH₂CH₂O)_n-W¹-O-W²-O-NH₂)_m

M²-(S-(CH₂CH₂O)_n-W¹-O-W²-O-NH(CH₃))_m,

M²-(S-W¹-C(=O)-NH-NH₂)_m M^2 -(S-W¹-C(=S)-NH-NH₂)_{ma}

M2-(S-W1-NH-C(=O)-CH(NH2)-W4-SH)m,

M²-(S-W¹-NH-C(=S)-CH(NH₂)-W⁴-SH)_m,

 $M^2-(S-Z^1-Z^2-Z^3-Z^4-Z^5-O-NH_2)_{m_1}$

 M^2 -(S-Z¹-Z²-Z³-Z⁴-Z⁵-O-NH(CH₃))_m

M²-(S-Z¹-Z²-Z³-Z⁴-CH(NH₂)-O-Z⁶-SH)_m,

M2-(S-Z1-Z2-Z3-Z4-CH(NH2)-Z6-SH)m,

M²-(S-Z¹-O-Z³-CH(NH₂)-Z⁶-SH)_m

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 $\begin{array}{ll} M^2 - (S - Z^1 - O - Z^3 - O - NH_2)_m \\ M^2 - (S - Z^1 - O - Z^3 - C - NH(CH_3))_m \\ M^2 - (S - Z^1 - O - Z^3 - Z^2 - Z^3 - O - NH(CH_3))_m \\ M^2 - (S - Z^1 - O - Z^3 - Z^2 - Z^3 - O - NH(CH_3))_m \\ M^2 - (S - Z^1 - O - Z^3 - Z^3 - C - NH(CH_3) - D^2 - S - NH_2 - C - D^2 - Z^3 - C - NH(CH_3) - D^2 - S - NH_2 - D^2 - D^2$

wherein, M^2 is a metal, m indicates a stoichiometric ratio of an organic residue with respect to M^2 and is an integer equal to or greater than one, the organic residue comprises a sulfur atom, Y, W^1 and W^2 are independently C1-C12 alkylene, C2-C12 alkenylene or C2-C12 alkynylene, W^4 is C1-C2 alkylene;

Z¹ is substituted or unsubstituted arvlen or heteroarvlen;

 Z^2 is a nitrogen-containing heterocycle, Z^3 and Z^5 are independently C1-C12 alkylene, Z^1 is O-C(=O), -O-C(=S), -NH-C(=O), -NH-C(=S), -O- or -S-, Z^6 is C1-C2 alkylene; and

- (Currently Amended) A method according to any one of claims 1 to 4 and 6, wherein the mass spectrometry is carried out by LDI-TOF MS method.
- 27. (Original) A method according to claim 10, wherein the mass spectrometry is carried out by LDI-TOF MS method.
- 28. (New) A method according to claim 5, wherein the metal is gold, silver, cadmium or selenium.
- 29. (New) A method according to claim 5, wherein the mass spectrometry is carried out by MALDI-TOF MS method.
- 30. (New) A method according to claim 5, wherein the mass spectrometry is carried out by LDI-TOF MS method.